AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. (currently amended) An implant for use in a patient's spinal column, said implant comprising:

a body portion having a length, a width, and a depth, and configured to be insertable between first and second bone segments, the body portion having an outer surface and an inner surface forming a hollow region, the hollow region comprising most of the volume of the body portion, the body portion further having first and second ~~longitudinal~~ open ends ~~which communicate with said inner surface~~ that define the width and depth of the body portion;

wherein at least one of the first and second ends comprises a single bone receiving channel extending there across that has a first depth ~~relative~~ measured from the trough of the channel to a first side of the outer surface at the at least one end, the first side extending along the length of the body portion, ~~and~~ the channel also having a second depth ~~relative~~ measured from the trough of the channel to a second side of the outer surface at the at least one end, the second side extending along the length of the body portion, the second side opposite the first side, the first and second depths having different measurements, the channel configured to engage at least one of the first and second bone segments.

2. (original) The implant of claim 1 wherein the perimeter of the outer surface of the implant is a substantially geometric shape.

3. (currently amended) The implant of claim 2 wherein the geometric shape is an ellipse having ~~a~~ the width and ~~a~~ depth of the body portion.

4. (original) The implant of claim 1 wherein the length ranges from about 11.5 to about 15.5 millimeters, the width ranges from about 8.0 to about 9.0 millimeters and the depth ranges from about 5.5 to about 6.5 millimeters.

5. (original) The implant of claim 2 wherein the geometric shape is a circle.

6. (original) The implant of claim 1 wherein the implant comprises a substantially tubular shape.

7. (original) The implant of claim 1 wherein the implant is formed of bone allograft material.

8. (previously presented) The implant of claim 7 wherein at least a portion of one of the first and second ends comprises demineralized cortical bone.

9. - 12. (canceled)

13. (previously presented) The implant of claim 7 wherein the bone allograft material is obtained from a cross-section of a donor bone having an intermedullary canal, and wherein said inner surface of the implant is defined by the intermedullary canal of the donor bone.

14. (previously presented) The implant of claim 13 wherein the inner surface is configured such that the volume of the hollow region is greater than the intermedullary canal of the donor bone.

15. (previously presented The implant of claim 1 further comprising:
a longitudinal axis, and

the bone receiving channel further comprises a centerline running parallel to the implant longitudinal axis dividing said ends, wherein the centerline of the bone receiving channel is offset from the longitudinal axis.

16. (previously presented) The implant of claim 1 wherein the bone receiving channel has a substantially concave arcuate shape.

17. (previously presented) The implant of claim 1 wherein both first and second ends comprise a bone receiving channel and both bone receiving channels have a substantially concave arcuate shape.

18. (previously presented) The implant of claim 1 wherein the bone receiving channel comprises at least two angled faces.

19. (original) The implant of claim 1 further comprising at least one surface defining a hole in communication with said outer surface and said inner surface, suitable for attaching a suture to secure said implant to at least one of said first and second bone segments.

20. (original) The implant of claim 1 wherein the implant is fabricated of biocompatable metal.

21. (original) The implant of claim 1 wherein the implant is fabricated of biocompatable polymer.

22. (canceled)

23. (currently amended) An implant for use in a patient's spinal column, said implant comprising:

a body portion having a longitudinal axis and configured to be insertable between first and second bone segments, the body portion having an outer surface[[,]] and an inner surface defining a substantially hollow portion, said body portion further having first and second ends ~~which communicate with~~ open to said hollow portion and orthogonal to said longitudinal axis, said first and second ends comprising ~~bone engaging portions; and said first and second bone engaging portions comprise~~ concave cutouts configured ~~and adapted~~ to engage and retain said first and second bone segments, the cutouts ~~further~~ each comprising a centerline running parallel to the implant longitudinal axis and dividing each of the cutouts,

wherein the centerline of the cutout of the first end is offset from the implant longitudinal axis in one direction, and the centerline of the cutout of the second end is offset from the implant longitudinal axis in the opposite direction.

24. (original) The implant of claim 23, wherein at least one cutout further comprises at least two angled faces.

25. (original) The implant of claim 23 wherein the at least one cutout has a substantially concave arcuate shape.

26. (canceled)

27. (original) The implant of claim 23 wherein the implant is formed of bone allograft material.

28. - 52. (canceled)

53. (currently amended) An implant for use in a patient's spinal column, said implant comprising:

a body portion having a length, a width, a depth and a longitudinal axis, and configured to be insertable between first and second cut bone segments, the body portion having an outer surface[[,]] and an inner surface defining a substantially hollow portion, the body portion further having first and second ends ~~which communicate with~~ open to said hollow portion and orthogonal to said longitudinal axis, at least one of the first and second ends comprising ~~bone engaging portions;~~

~~wherein at least one of the bone engaging portions comprises~~ a cutout configured ~~and adapted~~ to engage and retain at least one of the first and second cut bone segments, the cutout ~~further~~ comprising a centerline running parallel to the implant longitudinal axis dividing said ends, wherein the centerline of the at least one cutout is offset from the longitudinal axis.

54. (previously presented) The implant of claim 53 wherein the perimeter of the outer surface of the implant is a substantially geometric shape.

55. (currently amended) The implant of claim 54 wherein the geometric shape is an ellipse having ~~a~~ the width and ~~a~~ depth of the body portion.

56. (previously presented) The implant of claim 54 wherein the geometric shape is a circle.

57. (previously presented) The implant of claim 53 wherein the length ranges from about 11.5 to about 15.5 millimeters, the width ranges from about 8.0 to about 9.0 millimeters and the depth ranges from about 5.5 to about 6.5 millimeters.

58. (previously presented) The implant of claim 53 wherein the implant comprises a substantially tubular shape.

59. (previously presented) The implant of claim 53 wherein the implant is formed of bone allograft material.

60. (currently amended) The implant of claim 59 wherein at least a portion of at least one of said ~~bone engaging portion~~ first and second ends is comprised of demineralized cortical bone.

61. (previously presented) The implant of claim 59 wherein the bone allograft material is obtained from a cross-section of a donor bone having an intermedullary canal, and said inner surface is defined by the intermedullary canal of the donor bone.

62. (previously presented) The implant of claim 59 wherein the bone allograft material is obtained from a cross-section of a donor bone having an intermedullary canal, and said inner surface is configured such that the volume of said substantially hollow portion is greater than the intermedullary canal of the donor bone.

63. (previously presented) The implant of claim 53 wherein the at least one cutout has a substantially concave arcuate shape.

64. (currently amended) The implant of claim 53 wherein both ~~bone engaging portions~~ the first and second ends comprise cutouts and ~~further wherein~~ both cutouts have a substantially concave arcuate shape.

65. (previously presented) The implant of claim 53 wherein the at least one cutout comprises at least two angled faces.

66. (previously presented) The implant of claim 53 further comprising at least one surface defining a hole in communication with said outer surface and said inner surface, suitable for attaching a suture to secure said implant to at least one of said first and second bone segments.

67. (previously presented) The implant of claim 53 wherein the implant is fabricated of biocompatable metal.

68. (previously presented) The implant of claim 53 wherein the implant is fabricated of biocompatable polymer.

69. (currently amended) An implant for use in a patient's spinal column, the implant comprising:

a tubular body having a length, a width, and a depth, and an outer surface and an inner surface forming a thin tubular wall, the perimeter of the outer surface having a substantially oval, circular, or elliptical shape, the body further having first and second ~~longitudinal~~ open ends ~~which communicate with the inner surface~~ that define the width and depth of the tubular body; wherein:

at least one of the first and second ends comprises a single channel extending there across that has a first depth ~~relative~~ measured from the trough of the channel to a first side of the outer surface at the at least one end, the first side extending along the length of the tubular body, ~~and~~ the channel also having a second depth ~~relative~~ measured from the trough of the channel to a second side of the outer surface at the at least one end, the second side extending along the length of the tubular body, the second side opposite the first side, the first and second depths having different measurements, the channel configured to engage a bone segment.

70. (previously presented) The implant of claim 69 wherein the length ranges from about 11.5 to about 15.5 millimeters, the width ranges from about 8.0 to about 9.0 millimeters, and the depth ranges from about 5.5 to about 6.5 millimeters.

71. (previously presented) The implant of claim 69 wherein the tubular wall has a thickness of about 1.0 millimeters.

72. (currently amended) An implant for use in a patient's spinal column, the implant comprising:

a tubular body having a length, a width, a depth, a longitudinal axis, and an outer surface and an inner surface forming a thin tubular wall, the perimeter of the outer surface having a substantially oval, circular, or elliptical shape, the body further having first and second ends ~~which communicate with the inner surface~~ orthogonal to the longitudinal axis, at least one of the first and second ends comprising ~~bone engaging portions; wherein: at least one of the bone engaging portions comprises~~ a cutout configured to engage and retain a bone segment, the cutout ~~further~~ comprising a centerline running parallel to the implant longitudinal axis dividing the ends, the centerline of the at least one cutout being offset from the longitudinal axis.

73. (previously presented) The implant of claim 72 wherein the length ranges from about 11.5 to about 15.5 millimeters, the width ranges from about 8.0 to about 9.0 millimeters, and the depth ranges from about 5.5 to about 6.5 millimeters.

74. (previously presented) The implant of claim 72 wherein the tubular wall has a thickness of about 1.0 millimeters.